If you are using a printed copy of this procedure, and not the on-screen version, then you <u>MUST</u> make sure the dates at the bottom of the printed copy and the on-screen version match.

The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.

Hard copies of all signed, official, C-A Operating Procedures are available by contacting the

ESSHQ Procedures Coordinator, Bldg. 911A

C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

4.120.124.a.2 ATF Critical Device - 2 Tests

OPM Procedur	res in which this Attac	chment is used.
4.120.124		

Hand Processed Changes

HPC No.	<u>Date</u>	Page Nos.	<u>Initials</u>	
	Approved:	Signature on File		
		Physics Department Chair	Ī	Date

4.120.124.a.2 ATF Critical Device Tests

PASS ANNUAL ACCEPTANCE TEST PROTOCOL

Division A Software Filename and Checksum: Title:	Checksum:
Division B Software Filename and Checksum: Title:	Checksum:
<u>Initial testing complete</u> :	
Test Team Leader's Name (Print):	Life Number:
Test Team Leader's Name (Sign):	Date://
Acceptance test procedure complete (following repairs and retesting if required):	
Acceptance test procedure complete (following repairs and retesting if required):	
Test Team Leader's Name (Print):	Life Number:
Test Team Leader's Name (Sign):	Date://
Took would noviewed by	
Test results reviewed by:	
Safety Section Head's Name (Print):	Life Number:
Safety Section Head's Name (Sign):	Date:/
Took would appear to d by Do diction Sofety Committee.	
Test results accepted by Radiation Safety Committee:	
RSC Member's Name (Print):	Life Number:
RSC Member's Name (Sign):	Date:/

NOTE

All ATF Control Room (ACR) observations are on the MAIN page of the Panel View except when referred to the Details Page.

1.1 Test of the ATF Chicane Magnet in the OFF state and Not OFF fault for < and > 10 secs respectively.

SET	Chicane Mode Selector Key (CMSK) at ATF Control Room (ACR) to OFF	
VERIFY	CMSK is set to	OFF
VERIFY	On Details Page ACR sees Key SW Off: Div A \square and Div B \square	ON (Green)
VERIFY	Chicane Main Power Supply (CMPS) is	OFF
VERIFY	ACR sees voltages for Chicane Magnet (CM) 1 \square , CM2 \square , CM3 \square and CM4 \square are	0 ± .5 V
VERIFY	Primary ATF Critical Device (CDEV_1) [Laser shutter] is	OUT
VERIFY	ACR sees CDEV_1	Enabled OUT
VERIFY	ATF Reachback Critical Device (RHK_DV1) [Modulator 1]□ and RHK_DV2 [Modulator2]□ are	OFF
VERIFY	\mathbf{ACR} sees $\mathbf{RHK}_{\mathbf{DV1}} \square$ and $\mathbf{RHK}_{\mathbf{DV2}} \square$ are	Enabled OFF
VERIFY	ACR sees Not Off fault	OK (Blk)
AT	Encl 5805, ACS Chicane Magnet Readback Amplifiers (ACMRA), follow Push-button Tests in Tables 1thru 3 below	

P&H for <10	Verify during	ng P&H, for D	Div A, voltage	for	Verify for Div A		Verify		Verify Audible
secs Div A P/B	CM1 >0.5V	CM2 >0.5V	CM3 >0.5V	CM4 >0.5V	Not Off Fault OK (blue)	Cdev_1 Enab OUT	Rhk_Dv1 Enab OFF	Rhk_Dv2 Enab OFF	Alarm OFF
S1		N/A	N/A	N/A					
S2	N/A		N/A	N/A					
S3	N/A	N/A		N/A					
S4	N/A	N/A	N/A						

Table -1 Div A Test of Response to Not OFF Magnet voltage fault for <10 secs.

	Verify du	ring P&H, fo	or Div B, vol	tage for	Verify for Div		Verify	y on D	etls pg	e		¥7 •6	Cont'd
P&H Div B	CM1	CM2	CM3	CM4	B Not Off	Cde	ev_1	Rhk Enal	_Dv1 b Off	Rhk Enal	_Dv2 b Off	Verify Alarm	on Table
P/B for > 10secs	>0.5V	>0.5V	>0.5V	>0.5V	Fault (Red)	Div A Enab In	Div B Disab In	Div A	Div B	Div A	Div B	OFF	3
S1		N/A	N/A	N/A									
S2	N/A		N/A	N/A									
S3	N/A	N/A		N/A									
S4	N/A	N/A	N/A										

Table-2 Div B Test of Response to Not OFF Magnet voltage fault for >10 secs.

Clear	Verify vol	tage for Div	В		Verify for		Verif	y on Do	etls pg	e		¥7 •6	Go to next
Not Off fault	CM1	CM2	CM3	CM4	Div B Not Off	Cde	ev_1	Rhk_ Enal	_Dv1 b Off	Rhk Enal	_Dv2 b Off	Verify Alarm	switch in
with RHF	0 ± .5V	0 ± .5V	0 ± .5V	0 ± .5V	OK	Div A Enab Out	Div B Enab Out	Div A	Div B	Div A	Div B	OFF	Table 2
S1		N/A	N/A	N/A									
S2	N/A		N/A	N/A									
S3	N/A	N/A		N/A									
S4	N/A	N/A	N/A										End of Test

Table-3 Continuation of Div B Test of Response to Not Off Magnet voltage fault for >10 secs.

Check for acceptance of Test of the ATF Chicane Magnet in the OFF State and Not OFF Magnet
Voltage fault for < and > 10 secs respectively.

1.2 Test of Div A Power-up

VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Off: Div A □ and Div B □	OFF ON
VERIFY	ACR sees voltages for CM1 \square , CM2 \square , CM3 \square and CM4 \square are	$0 \pm .5 \text{ V}$
VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees >10% fault	Enabled OUT Enabled OFF OK
Turn OFF VERIFY WAIT Turn ON VERIFY	AC Power to Div A Field Rack PLC AC Power to Div A Field Rack PLC is 30 Secs AC Power to Div A Field Rack PLC AC Power to Div A Field Rack PLC	TURNED OFF
VERIFY	ACR sees CDEV_1	A<>B
VERIFY	ACR sees RHK_DV1 □ and RHK_DV2 □ are	A<>B
VERIFY	Audio Alarm	ON
VERIFY	Attempt to silence Alarm	SUCCESSFUL
VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A ACR sees on Detls pge CDEV_1: Div B ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A	Disabled IN Enabled IN Disabled OFF
VERIFY	ACR sees on Detls pge RHK_DV1 \square and RHK_DV2 \square , Div B	Enabled OFF
VERIFY	ACR sees on Detls pge R I/O Fault: Div A	Fault
VERIFY	ACR sees on Detls pge R I/O Fault: Div B	OK
VERIFY	ACR sees on Detls pge Reachback: Div A	Fault
VERIFY	ACR sees on Detls pge Reachback: Div B	OK
VERIFY VERIFY	ACR sees on Detls pge Cmms: Div A ACR sees on Detls pge Cmms: Div B	Ng Cmms OK
VERIFY VERIFY	Attempt to clear R I/O fault with RHF Attempt to clear Reachback	SUCCESSFUL SUCCESSFUL
VERIFY	ACR sees on Detls pge R I/O Fault: Div A \square and Div B \square	OK
VERIFY	ACR sees on Detls pge Reachback: Div A □ and Div B □	OK
VERIFY	ACR sees on Detls pge Cmms: Div A □ and Div B □	OK
VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1 : Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Enabled OUT Enabled OFF Enabled OFF
VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are	Enabled OUT Enabled OFF
Check fo	or acceptance of Test of Div A Power-up	

1.3 Test of Div B Ng RI/O with the ATF Chicane Magnet in the OFF state.

VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Off : Div A \square and Div B \square	OFF ON
VERIFY	ACR sees voltages for CM1 \square , CM2 \square , CM3 \square and CM4 \square are	$0 \pm .5 \text{ V}$
VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees Reachback	Enabled OUT Enabled OFF OK
REMOVE	RI/O from Div B Field rack Module 7	
VERIFY VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees Reachback Div B Audio Alarm Attempt to Silence Audio alarm	A<>B A<>B nd ON SUCCESSFUL
VERIFY REPLACE	Attempt to Reset RI/O fault with Reset H/Ware Fault (RHF) RI/O from Div B Field rack Module 7	UNSUCCESSFUL
VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY	ACR sees on Detls pge RI/O Fault, Div B ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B ACR sees on Detls pge CDEV_1, Div A ACR sees on Detls pge CDEV_1, Div B ACR sees on Detls pge Div B Cmms ACR sees on Detls pge Reachback Div B	Fault Enabled OFF Disabled OFF Enabled IN Disabled IN Ng Cmms Fault
VERIFY VERIFY	Attempt to Reset Reachback Attempt to Reset RI/O fault with RHF	UNSUCCESSFUL SUCCESSFUL
VERIFY VERIFY VERIFY	ACR sees on Detls pge RI/O Fault ACR sees on Detls pge Cmms: Div A □ and Div B □ Attempt to Reset Reachback ACR sees on Detls pge Reachback: Div A □ and Div B □	OK OK SUCCESSFUL OK
VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are	Enabled OUT Enabled OFF
Check for a	cceptance of Test of Div B Ng RI/O with the ATF Chicane Magne	t in the OFF state.
t of Div A Inco	orrect Primary Critical Device Response with the ATF Chicane M	agnet in the OFF
VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Off : Div A \square and Div B \square	OFF ON
VERIFY	ACR sees voltages for: CM1 \square , CM2 \square , CM3 \square and CM4 \square are	$0 \pm .5 \text{ V}$
VERIFY	ACR sees CDEV_1	Enabled OUT

	VERIFY VERIFY	ACR sees RIN_DVI \(\) and RIN_DV2 \(\) are ACR sees Reachback ACR sees on Detls pge CDEV_1: Div A \(\) and Div B \(\)	OK Enabled OUT
	VERIFY VERIFY	ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Enabled OFF Enabled OFF
	P&H VERIFY VERIFY VERIFY	At encl 5805, ACMRA, Div A S1 for >10 secs ACR sees on Detls pge Not Off Fault, Div A ACR sees on Detls pge CDEV_1: Div A ACR sees on Detls pge CDEV_1: Div B	FAULT Disabled IN Enabled IN
	P&H	At encl 5806, CIB, Div A Laser Shutter Test button for > 2secs	
	VERIFY VERIFY VERIFY VERIFY	ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B ACR sees Reachback Div A Audio Alarm is	Disabled OFF Enabled OFF Fault OFF
	VERIFY VERIFY	Attempt to Reset Not Off fault with RHF Attempt to Reset Reachback	SUCCESSFUL SUCCESSFUL
	VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Enabled OUT Enabled OFF Enabled OFF
	VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are	Enabled OUT Enabled OFF
_			
		cceptance of Test of Div A Incorrect Primary Critical Device Respect in the OFF state.	
	Chicane Mag	eceptance of Test of Div A Incorrect Primary Critical Device Respect in the OFF state.	sponse with the ATF
Tes	Chicane Mag	cceptance of Test of Div A Incorrect Primary Critical Device Res	sponse with the ATF
Tes	Chicane Mag	eceptance of Test of Div A Incorrect Primary Critical Device Respect in the OFF state.	sponse with the ATF
Tes	Chicane Mag st of Div A Inc DFF state. VERIFY	ecceptance of Test of Div A Incorrect Primary Critical Device Respond in the OFF state. orrect Reachback Critical Device 1 Response with the ATF Chical CMSK is set to	sponse with the ATF ane Magnet in the OFF
Tes	Chicane Mag st of Div A Inc DFF state. VERIFY VERIFY	cceptance of Test of Div A Incorrect Primary Critical Device Response in the OFF state. orrect Reachback Critical Device 1 Response with the ATF Chical CMSK is set to On Detls Pge ACR sees Key SW Off: Div A and Div B	sponse with the ATF ane Magnet in the OFF ON
Tes (Chicane Mag st of Div A Inc DFF state. VERIFY VERIFY VERIFY VERIFY VERIFY	cceptance of Test of Div A Incorrect Primary Critical Device Response in the OFF state. CMSK is set to On Detls Pge ACR sees Key SW Off: Div A and Div B ACR sees voltages CM 1 , CM2 , CM3 and CM4 are ACR sees CDEV_1 ACR sees RHK_DV1 and RHK_DV2 are ACR sees Reachback	opense with the ATF ane Magnet in the OFF ON 0 ± .5 V Enabled OUT Enabled OFF OK

ACR sees **RHK_DV1** \square and **RHK_DV2** \square are

1.5

□ VERIFY

Enabled OFF

	VERIFY VERIFY	ACR sees on Detls pge Reachback Div A ACR sees on Detls pge Bad Reachback Div A	Fault Fault
_ _ _	VERIFY VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A ACR sees on Detls pge CDEV_1: Div B ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Disabled IN Enabled IN Disabled OFF Enabled OFF
	VERIFY VERIFY	Audio Alarm Attempt to Silence Audio alarm	ON SUCCESSFUL
	VERIFY VERIFY	Attempt to Reset Reachback and Bad Reachback ACR sees on Detls pge: Reachback □ and Bad Reachback □	SUCCESSFUL OK
	VERIFY VERIFY	ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Enabled OFF Enabled OFF
	VERIFY VERIFY	Attempt to Reset Not Off Fault ACR sees on Detls pge Not Off Fault	SUCCESSFUL OK
	VERIFY	ACR sees on Detls pge CDEV_1 : Div A \square and Div B \square	Enabled OUT
	VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are	Enabled OUT Enabled OFF
		acceptance of Test of Div A Incorrect Reachback Critical Device	1 Response with the
		ne Magnet in the OFF state. orrect Reachback Critical Device 2 Response with the ATF Chica	ne Magnet in the
	st of Div B Inco DFF state. VERIFY	orrect Reachback Critical Device 2 Response with the ATF Chical	OFF
_	st of Div B Inco DFF state.	orrect Reachback Critical Device 2 Response with the ATF Chica	-
	st of Div B Inco DFF state. VERIFY	orrect Reachback Critical Device 2 Response with the ATF Chical	OFF
	st of Div B Inco DFF state. VERIFY VERIFY	orrect Reachback Critical Device 2 Response with the ATF Chical CMSK is set to On Detls Pge ACR sees Key SW Off: Div A □ and Div B □	OFF ON
	st of Div B Inco DFF state. VERIFY VERIFY VERIFY VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Off: Div A \(\text{and Div B} \) ACR sees voltages CM 1 \(\text{bold}, \text{ CM2} \), CM3 \(\text{and CM4} \) are ACR sees RHK_DV1 \(\text{and RHK_DV2} \) are ACR sees Reachback	OFF ON 0 ± .5 V Enabled OUT Enabled OFF OK
	ot of Div B Inco DFF state. VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY P&H VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Off: Div A \(\) and Div B \(\) ACR sees voltages CM 1 \(\), CM2 \(\), CM3 \(\) and CM4 \(\) are ACR sees RHK_DV1 \(\) and RHK_DV2 \(\) are ACR sees Reachback ACR sees on Detls pge CDEV_1: Div A \(\) and Div B \(\) At encl 5805, ACMRA, Div B S3 for >10 secs ACR sees on Detls pge CDEV_1: Div B ACR sees on Detls pge CDEV_1: Div B	OFF ON 0 ± .5 V Enabled OUT Enabled OFF OK Enabled OUT FAULT Enabled IN

VERIFY	ACR sees on Detls pge Bad Reachback Div B	Fault
VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A ACR sees on Detls pge CDEV_1: Div B ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Enabled IN Disabled IN Enabled OFF Disabled OFF
VERIFY VERIFY	Audio Alarm Attempt to Silence Audio alarm	ON SUCCESSFUL
VERIFY VERIFY	Attempt to Reset Reachback and Bad Reachback ACR sees on Detls pge: Reachback □ and Bad Reachback □	SUCCESSFUL OK
VERIFY VERIFY	ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Enabled OFF Enabled OFF
VERIFY VERIFY	Attempt to Reset Not Off Fault ACR sees on Detls pge Not Off Fault	SUCCESSFUL OK
VERIFY	ACR sees on Detls pge CDEV_1 : Div A \square and Div B \square	Enabled OUT
VERIFY VERIFY	ACR sees on Main pge CDEV_1 ACR sees on Main pge RHK_DV1 □ and RHK_DV2 □ are	Enabled OUT Enabled OFF
	cceptance of Test of Div B Incorrect Reachback Critical Device 2 ne Magnet in the OFF state.	Response with the

1.7 Test of the ATF Chicane Magnet in the ON state and >10% fault for < and >10 secs respectively.

	SET	Chicane Mode Selector Key (CMSK) at ATF Control Room (ACR) to ON	
	VERIFY	CMSK is set to	ON
	VERIFY	On Detls Pge ACR sees Key SW ON : Div A \square and Div B \square	ON (Green)
	VERIFY	Chicane Power Supplies (CPS) 1 \square , CPS2 \square , CPS3 \square and CPS4 \square are	OFF
	VERIFY	ACR sees voltages for Chicane Magnet (CM) 1 □, CM2 □, CM3 □	
		and CM4 □ are	$0 \pm .5 \text{ V}$
	VERIFY	Primary ATF Critical Device (CDEV_1) [Laser shutter] is	OUT
	VERIFY	ACR sees CDEV_1	Enabled OUT
	VERIFY VERIFY	ACR sees CDEV_1 ATF Reachback Critical Device (RHK_DV1) [Modulator 1]□ and	Enabled OUT
_			Enabled OUT OFF
_		ATF Reachback Critical Device (RHK_DV1) [Modulator 1]□ and	
	VERIFY	ATF Reachback Critical Device (RHK_DV1) [Modulator 1]□ and RHK_DV2 [Modulator2]□ are	OFF

P&H for <10	Verify duri	rify during P&H, for Div B, voltage for				Verify for Div B Verify					
secs Div B P/B	CM1 >0.5V			CM4 >0.5V	>10% Fault OK Cdev_1 Enab OUT		RHK_DV1 Enab OFF	RHK_DV2 Enab OFF	Alarm OFF		
S1		N/A	N/A	N/A							
S2	N/A		N/A	N/A							
S3	N/A	N/A		N/A							
S4	N/A	N/A	N/A								

Table -4 Div B Test of Response to >10% Magnet voltage fault for <10 secs.

	Verify during P&H, for Div A, voltage for				Verify for Div		Verify on Detls pge						Cont'd
P&H Div A	CM1	CM2	CM3	CM4	A >10% Fault Fault (Red)	Cdev_1		Rhk_Dv1 Enab Off		Rhk_Dv2 Enab Off		Verify Alarm OFF	on Table
P/B for > 10secs	>0.5V	>0.5V	>0.5V	>0.5V		Div A Disab In	Div B Enab In	Div A	Div B	Div A	Div B	OFF	6
S1		N/A	N/A	N/A									
S2	N/A		N/A	N/A									
S3	N/A	N/A		N/A									
S4	N/A	N/A	N/A										

Table-5 Div A Test of Response to >10% Magnet voltage fault for >10 secs.

	Verify voltage for				Verify		Verify	y on D	etls pg	e		¥7 • 6	Go to next
Reset >10%	CM1	CM2	CM2	CM4 0 ± .5V	for Div A >10%	Cdev_1		Rhk_Dv1 Enab Off		Rhk_Dv2 Enab Off		Verify Alarm	switch in
fault	_	-	CM3 0 ± .5V		Fault OK	Div A Enab Out	Div B Enab Out	Div A	Div B	Div A	Div B	OFF	Table 5
S1		N/A	N/A	N/A									
S2	N/A		N/A	N/A									
S3	N/A	N/A		N/A									
S4	N/A	N/A	N/A										End of Test

Table-6 Div A Test of Response to >10% Magnet voltage fault for >10 secs Continued.

 $\hfill\Box$ Check for acceptance of Test of the ATF Chicane Magnet in the ON state and >10% fault for < and > 10 secs respectively.

1.8 Test of Div B Power-up

VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Off : Div A □ and Div B □	OFF ON
VERIFY	ACR sees voltages for CM1 \square , CM2 \square , CM3 \square and CM4 \square are	$0 \pm .5 \text{ V}$
VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees >10% fault	Enabled OUT Enabled OFF OK
Turn OFF VERIFY WAIT Turn ON VERIFY	AC Power to Div B Field Rack PLC AC Power to Div B Field Rack PLC is 30 Secs AC Power to Div B Field Rack PLC AC Power to Div B Field Rack PLC is	TURNED OFF
VERIFY VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are Audio Alarm Attempt to silence Alarm	A<>B A<>B ON SUCCESSFUL
VERIFY VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A ACR sees on Detls pge CDEV_1: Div B ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Enabled IN Disabled IN Enabled OFF Disabled OFF
VERIFY VERIFY	ACR sees on Detls pge R I/O Fault: Div A ACR sees on Detls pge R I/O Fault: Div B	OK Fault

VERIFY	ACR sees on Detls pge Reachback: Div A	OK
VERIFY	ACR sees on Detls pge Reachback: Div B	Fault
VERIFY	ACR sees on Detls pge Cmms: Div A	OK
VERIFY	ACR sees on Detls pge Cmms: Div B	Ng Cmms
VERIFY	Attempt to clear R I/O fault with RHF	SUCCESSFUL
VERIFY	Attempt to clear Reachback	SUCCESSFUL
VERIFY	ACR sees on DetIs pge R I/O Fault: Div A \square and Div B \square	OK
VERIFY	ACR sees on DetIs pge Reachback : Div A \square and Div B \square	OK
VERIFY	ACR sees on Detls pge Cmms : Div A \square and Div B \square	OK
VERIFY	ACR sees on Detls pge CDEV_1 : Div A \square and Div B \square	Enabled OUT
VERIFY	ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A	Enabled OFF
VERIFY	ACR sees on Detls pge RHK_DV1 \square and RHK_DV2 \square , Div B	Enabled OFF
VERIFY	ACR sees CDEV_1	Enabled OUT
VERIFY	ACR sees RHK_DV1 \square and RHK_DV2 \square are	Enabled OFF
Check fo	or acceptance of Test of Div B Power-up	

1.9 Test of Div A Ng RI/O with the ATF Chicane Magnet in the ON state.

VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW ON : Div A □ and Div B □	ON ON
VERIFY	ACR sees voltages for Chicane Magnet (CM) 1 \square , CM2 \square , CM3 \square and CM4 \square are	0 ± .5 V
VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees Reachback	Enabled OUT Enabled OFF OK
REMOVE	RI/O from Div A Field rack Module 6	
VERIFY VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees Reachback Div A Audio Alarm Attempt to Silence Audio alarm	A<>B A<>B nd ON SUCCESSFUL
VERIFY REPLACE	Attempt to Reset RI/O fault with RHF RI/O from Div A Field rack Module 6	UNSUCCESSFUL
VERIFY VERIFY VERIFY VERIFY VERIFY	ACR sees on Detls pge RI/O Fault, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B ACR sees on Detls pge CDEV_1, Div A ACR sees on Detls pge CDEV_1, Div B ACR sees on Detls pge Div A Cmms	Fault Disabled OFF Enabled OFF Disabled IN Enabled IN Ng Cmms

	VERIFY	ACR sees on Detls pge Reachback Div A	Fault
	VERIFY VERIFY	Attempt to Reset Reachback Attempt to Reset RI/O fault with RHF	UNSUCCESSFUL SUCCESSFUL
	VERIFY VERIFY VERIFY	ACR sees on Detls pge RI/O Fault ACR sees on Detls pge Cmms: Div A □ and Div B □ Attempt to Reset Reachback ACR sees on Detls pge Reachback: Div A □ and Div B □	OK OK SUCCESSFUL OK
	VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are	Enabled OUT Enabled OFF
	Check for	acceptance of Test of Div A Ng RI/O with the ATF Chicane Mag	net in the ON state.
1	est of Div B Inc tate.	correct Primary Critical Device Response with the ATF Chicane N	Agnet in the ON
	VERIFY	CMSK is set to	ON
	VERIFY	On Detls Pge ACR sees Key SW ON : Div A \square and Div B \square	ON
	VERIFY	ACR sees voltages for: CM1 \square , CM2 \square , CM3 \square and CM4 \square are	$0 \pm .5 \text{ V}$
	VERIFY VERIFY VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees Reachback ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Enabled OUT Enabled OFF OK Enabled OUT Enabled OFF Enabled OFF
	P&H VERIFY VERIFY VERIFY	At encl 5805, ACMRA, Div B S1 for >10 secs ACR sees on Detls pge >10% Fault, Div B ACR sees on Detls pge CDEV_1: Div A ACR sees on Detls pge CDEV_1: Div B	FAULT Enabled IN Disabled IN
	P&H	At encl 5806, CIB, Div B Laser Shutter Test button for > 2secs	
	VERIFY VERIFY VERIFY VERIFY	ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B ACR sees Reachback Div B Audio Alarm	Enabled OFF Disabled OFF Fault OFF
	VERIFY VERIFY	Attempt to Reset >10% fault Attempt to Reset Reachback	SUCCESSFUL SUCCESSFUL
	VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Enabled OUT Enabled OFF Enabled OFF
	VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are	Enabled OUT Enabled OFF

 \Box Check for acceptance of Test of Div B Incorrect Primary Critical Device Response with the ATF Chicane Magnet in the ON state.

1.11 Test of Div A Incorrect Reachback Critical Device 2 Response with the ATF Chicane Magnet in the ON state.

VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW ON : Div A □ and Div B □	ON ON
VERIFY	ACR sees voltages CM 1 \square , CM2 \square , CM3 \square and CM4 \square are	$0 \pm .5 \text{ V}$
VERIFY VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees Reachback ACR sees on Detls pge CDEV_1: Div A □ and Div B □	Enabled OUT Enabled OFF OK Enabled OUT
P&H VERIFY VERIFY VERIFY	At encl 5805, ACMRA, Div A S3 for >10 secs ACR sees on Detls pge >10% Fault, Div A ACR sees on Detls pge CDEV_1: Div A ACR sees on Detls pge CDEV_1: Div B	FAULT Disabled IN Enabled IN
PRESS PRESS	At encl 5806, CIB, Div A Lsr Shtr Test button, till Reachback At encl 5806, CIB, Div A Mod 2 Test button till Bad reachback	
VERIFY VERIFY	ACR sees on Detls pge Reachback Div A ACR sees on Detls pge Bad Reachback Div A	Fault Fault
VERIFY VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A ACR sees on Detls pge CDEV_1: Div B ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Disabled IN Enabled IN Disabled OFF Enabled OFF
VERIFY VERIFY	Audio Alarm Attempt to Silence Audio alarm	ON SUCCESSFUL
VERIFY VERIFY	Attempt to Reset Reachback and Bad Reachback ACR sees on Detls pge: Reachback □ and Bad Reachback □	SUCCESSFUL OK
VERIFY VERIFY	ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Enabled OFF Enabled OFF
VERIFY VERIFY	Attempt to Reset >10% Fault ACR sees on Detls pge >10% Fault	SUCCESSFUL OK
VERIFY	ACR sees on Detls pge CDEV_1: Div A \square and Div B \square	Enabled OUT
VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are	Enabled OUT Enabled OFF

[☐] Check for acceptance of Test of Div A Incorrect Reachback Critical Device 2 Response with

1.12		est of Normal s Degauss	etup of the ATF Chicane Magnet with Chicane Mode Selector key	(CMSK) set to
		SET VERIFY VERIFY	CMSK at ATF Control Room (ACR) to Degauss CMSK is set to On Details Page ACR sees Key SW Degauss: Div A □ and Div B □	DEGAUSS ON
		VERIFY	ACR sees voltages for Chicane Magnet CM1 \square , CM2 \square , CM3 \square and CM4 \square are	0 ± .5 V
		VERIFY VERIFY VERIFY	Primary ATF Critical Device CDEV_1 is ACR sees CDEV_1 ACR sees RHK_DV1 and RHK_DV2 are	INSERTED Disabled IN Enabled OFF
		Check for to Degaus	acceptance of Test of Normal setup of the ATF Chicane Magnet was.	vith the CMSK se
1.13		est of Div A Inc Degauss state.	correct Primary Critical Device Response with the ATF Chicane M	Iagnet in the
		VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Degauss: Div A □ and Div B □	DEGAUSS ON
		VERIFY	ACR sees voltages for: CM1 □, CM2 □, CM3 □ and CM4 □ are	0 ± .5 V
		VERIFY VERIFY VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees Reachback ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Disabled IN Enabled OFF OK Disabled IN Enabled OFF Enabled OFF
		Р&Н	At encl 5806, CIB, Div A Laser Shutter Test button for > 2secs	
		VERIFY VERIFY VERIFY VERIFY	ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B ACR sees Reachback Div A Audio Alarm	Disabled OFF Enabled OFF Fault OFF
		VERIFY	Attempt to Reset Reachback	SUCCESSFUL
		VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Disabled IN Enabled OFF Enabled OFF
		VERIFY	ACR sees CDEV_1	Disabled IN
$C \wedge$	OD	M ATT / 12	0.124 2.2	Pavision 01

		VERIFY	ACR sees RHK_DV1 □ and RHK_DV2 □ are	Enabled OFF
			acceptance of Test of Div A Incorrect Primary Critical Device Renewal Magnet in the Degauss state.	sponse with the
1.14	Te	est of Div B Inc	correct Primary Critical Device Response with the ATF Chicane N	Aagnet in the
	D	egauss state.		
		VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Degauss : Div A □ and Div B □	DEGAUSS ON
		VERIFY	ACR sees voltages for: CM1 \square , CM2 \square , CM3 \square and CM4 \square are	$0 \pm .5 \text{ V}$
		VERIFY VERIFY VERIFY VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees Reachback ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Disabled IN Enabled OFF OK Disabled IN Enabled OFF Enabled OFF
		Р&Н	At encl 5806, CIB, Div B Laser Shutter Test button for > 2secs	
		VERIFY VERIFY VERIFY VERIFY	ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B ACR sees Reachback Div B Audio Alarm	Enabled OFF Disabled OFF Fault OFF
		VERIFY	Attempt to Reset Reachback	SUCCESSFUL
		VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Disabled IN Enabled OFF Enabled OFF
		VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are	Disabled IN Enabled OFF
			acceptance of Test of Div B Incorrect Primary Critical Device Resagnet in the Degauss state.	ponse with the ATF
1.15		est of Div A Inc Degauss state.	correct Reachback Critical Device 1 Response with the ATF Chica	ane Magnet in the
		VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Degauss : Div $A \square$ and Div $B \square$	DEGAUSS ON
		VERIFY	ACR sees voltages CM1 □, CM2 □, CM3 □ and CM4 □ are	0 ± .5 V
		VERIFY	ACR sees CDEV_1	Disabled IN

	VERIFY VERIFY VERIFY	ACR sees RHK_DV1 □ and RHK_DV2 □ are ACR sees Reachback ACR sees on Detls pge CDEV_1: Div A □ and Div B □	Enabled OFF OK Disabled IN			
	PRESS PRESS	At encl 5806, CIB, Div A Lsr Shtr Test button, till Reachback At encl 5806, CIB, Div A Mod 1 Test button till Bad reachback				
	VERIFY VERIFY	ACR sees on Detls pge Reachback Div A ACR sees on Detls pge Bad Reachback Div A	Fault Fault			
_ _ _	VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Disabled IN Disabled OFF Enabled OFF			
	VERIFY VERIFY	Audio Alarm Attempt to Silence Audio alarm	ON SUCCESSFUL			
	VERIFY VERIFY	Attempt to Reset Reachback and Bad Reachback ACR sees on Detls pge: Reachback □ and Bad Reachback □	SUCCESSFUL OK			
	VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Disabled IN Enabled OFF Enabled OFF			
	VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are	Disabled IN Enabled OFF			
□ Check for acceptance of Test of Div A Incorrect Reachback Critical Device 1 Response with the ATF Chicane Magnet in the Degauss state.						
			Response with the			
			Response with the			
To	ATF Chica					
To	ATF Chica	ne Magnet in the Degauss state.				
To	ATF Chica est of Div B Inc degauss state. VERIFY	ne Magnet in the Degauss state. correct Reachback Critical Device 2 Response with the ATF Chica CMSK is set to	ane Magnet in the DEGAUSS			
T(I	ATF Chica est of Div B Inc degauss state. VERIFY VERIFY	correct Reachback Critical Device 2 Response with the ATF Chical CMSK is set to On Detls Pge ACR sees Key SW Degauss: Div A and Div B	ane Magnet in the DEGAUSS ON			
	ATF Chica est of Div B Inc degauss state. VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Degauss: Div A and Div B ACR sees voltages CM1 , CM2 , CM3 and CM4 are ACR sees CDEV_1 ACR sees RHK_DV1 and RHK_DV2 are ACR sees Reachback	DEGAUSS ON 0 ± .5 V Disabled IN Enabled OFF OK			
	ATF Chica est of Div B Inc degauss state. VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY PRESS	CMSK is set to On Detls Pge ACR sees Key SW Degauss: Div A and Div B ACR sees voltages CM1 , CM2 , CM3 and CM4 are ACR sees RHK_DV1 and RHK_DV2 are ACR sees Reachback ACR sees on Detls pge CDEV_1: Div A and Div B are At encl 5806, CIB, Div B Lsr Shtr Test button, till Reachback	DEGAUSS ON 0 ± .5 V Disabled IN Enabled OFF OK			

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	VERIFY	ACR sees on Detls pge RHK_DV1 \square and RHK_DV2 \square , Div B	Disabled OFF			
	VERIFY VERIFY	Audio Alarm Attempt to Silence Audio alarm	ON SUCCESSFUL			
	VERIFY VERIFY	Attempt to Reset Reachback and Bad Reachback ACR sees on Detls pge: Reachback □ and Bad Reachback □	SUCCESSFUL OK			
	VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Disabled IN Enabled OFF Enabled OFF			
	VERIFY VERIFY	ACR sees on Main pge CDEV_1 ACR sees on Main pge RHK_DV1 □ and RHK_DV2 □ are	Disabled IN Enabled OFF			
		cceptance of Test of Div B Incorrect Reachback Critical Device 2 ne Magnet in the Degauss state.	Response with the			
Test of Laser Shutter for Middle indication utilizing the Disabled In condition for the Magnet Degauss state.						
	VERIFY VERIFY	CMSK is set to On Detls Pge ACR sees Key SW Degauss: Div A □ and Div B □	DEGAUSS ON			
	VERIFY	ACR sees voltages CM1 \square , CM2 \square , CM3 \square and CM4 \square are	$0 \pm .5 \text{ V}$			
	VERIFY	ACR sees CDEV_1	Disabled IN			
	P & H	At encl 5806, CIB, Div A & Div B Lsr Shtr Test buttons simultaneously				
	VERIFY VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B ACR sees on Main pge CDEV_1	Disabled OUT Disabled OFF Disabled OFF MIDDLE			
	RELEASE	Div A & Div B Lsr Shtr Test buttons				
	VERIFY VERIFY	Attempt to Reset Reachback ACR sees on Detls pge Reachback: Div A □ and Div B □	SUCCESSFUL OK			
	VERIFY VERIFY VERIFY	ACR sees on Detls pge CDEV_1: Div A □ and Div B □ ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div A ACR sees on Detls pge RHK_DV1 □ and RHK_DV2 □, Div B	Disabled IN Enabled OFF Enabled OFF			
	VERIFY VERIFY	ACR sees CDEV_1 ACR sees RHK_DV1 □ and RHK_DV2 □ are	Disabled IN Enabled OFF			
		cceptance of Test of Laser Shutter for Middle indication utilizing or the Magnet Degauss state.	the Disabled In			

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing:		
	Date: //_	
TTL: Sign for completion of final testing:		
	Date: / /	